

Conflict Early Warning System Index as a Preventive Effort

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Abstract

The purpose of this study is to identify if a conflict is low, medium, or high level through the development of the conflict early warning system index which in turn serves as a preventive measure for conflict. The method used in this is the structural, sequential, and conjunctural model approach. Respondents of this study were farmers who were aware of issues regarding the Kulon Progo coastal land conflict and participated actively in the iron sand mining counter-movement. This study used proportional random sampling and obtained 279 subjects. Data collection used the Kulon Progo coastal area conflict scale, the categorisation scale, the group identification scale, the group bias scale, the social resource scale, the motivational resource scale, the cognitive resource scale, the attitude scale, the subjective norm scale, and the perceived behavioural control scale. The research findings show that the conflict early warning system index is categorized as high and still latent. Based on this high index, it can be recommended that preventive measures should be taken by maintaining the land as an agricultural area so that the conflict does not manifest. This effort is beneficial for the farmers' welfare, preserves the environment, and returns social capital. If implemented, this method can reduce the conflict index as it should be able to help peacefully maintain the social and cultural system of farmers.

Keywords: index, early warning system, conflict, farmers.

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Introduction

The process of acquiring land through legal approach will lead to conflict. Farmers who are members of the Paguyuban Petani Lahan Pantai Kulon Progo (PPLP-KP) or Farmer's Association of Kulon Progo Coastal Land Acquisition opposes the land acquisition. PPLP-KP's resistance to the legalisation of coastal land has a legal basis, that is, the Basic Agrarian Law Act No. 5 which contains the Basic Principles of Agrarian Law. The law states that citizens who have been cultivating the land for more than 20 years have land rights or ownership rights. The law mentioned above is a legal basis and a foundation of farmers' rejection of coastal land legalisation: because they have been cultivating the land for more than 20 years (Isnadi, 2012).

Another matter that causes a conflict of natural resources in the Kulon Progo coast is related to fulfilment of basic necessities. For more than 45 years, farmers' lives depended on the plantation of various vegetables and fruit commodities in the coastal areas. The coastal land conversion policy from being agricultural land into an area of iron sand mining has an impact on farmers losing their livelihoods as they will no longer have land to grow crops. This policy causes conflict because farmers do not want to lose land as their only source of income, thus motivating farmers to reject the legalisation of land as an iron sand mining area (Sjafri, 2011).

Resistance to land acquisition has become a latent conflict. The resistance of PPLP-KP is manifested through the formation of paramilitary units that carry out physical attacks if the authorities forcibly take control of the farmers' land. Farmers realise the negative impact of physical resistance, for example, the occurrence of casualties. For farmers, the death toll is a tool for advocacy to raise the issue of land conflicts to international institutions (Suyono, 2015).

This latent natural resource conflict may subsequently cause horizontal conflicts. Before there was a plan to mine iron sand, farmers in the Kulon Progo coastal area lived in harmony. The togetherness became polarised because there were two different perspectives responding to the iron sand mining plan: One group agreed while the other opposed. This opposition has led to hostilities among the farmers of the Kulon Progo coast, which in turn led to the destruction of social capital (Suyono, 2013).

There is yet any strategy to prevent the development of a latent conflict over natural resources. Stakeholders, namely the local government and security forces, have not carried out any peacebuilding agenda to the conflicted areas. The indifference of stakeholders is feared to escalate the conflict, subsequently leading to violence (Suyono, 2013).

Escalation of conflict requires preventive efforts to avoid physical violence. One form of preventive effort is the discovery of a conflict early warning system index. Findings from the conflict early warning system index can be used to identify levels of conflict which may either be on low, medium and high

(Suyono, 2018). The results of the conflict early warning system index are useful as a conflict management strategy that can bring peace.

Fostering peace through the conflict early warning system index begins with the identification of variables that cause conflict. After understanding the variables that predict conflict, a model that describes the psychological dynamics of conflict can be developed. Description of the conflict model becomes the basis of the conflict early warning system index. A thorough understanding of the steps in discovering a conflict early warning system index can function as a basis for decision making when handling conflict to prevent escalation into a violent conflict (Suyono, 2018).

Research shows that an early conflict warning index system can be used as a preventive measure as it has a high accuracy of up to 80% in predicting conflict levels (O'Brien, 1993). Other research provided evidence that the discovery of the conflict early warning system index is an effective strategy to prevent the manifestation of conflicts. The conflict early warning system index is an effective strategy to avoid disputes as its output indicates a level of conflict, either at a low, medium or high level. This finding can become the foundation for conflict prevention policies (Feil, 1998; George & Holl, 1997; Davies & Gurr, 1998).

The accuracy of the conflict early warning system index as a preventive effort has led to its implementation in various countries. Past research has found that an early warning system was effective in preventing conflict in Sudan (Cilliers, 2006). The development of conflict early warning systems has proven to be effective in preventing genocide conflicts, namely the slaughter of ethnic groups or tribes in the region (Srinivasan, 2006). Early warning systems in Sub-Saharan Africa was also effective in the management of conflicts, subsequently preventing conflict manifestation (Davis, 2000). Another country that has implemented an effective conflict early warning system is Kenya (Babaud & Ndung'u, 2012). Liberia has also implemented an early warning to anticipate large-scale conflicts, such as ethnic and religious conflicts (Blair, Blattman, & Hartman, 2013). Lisbon has also implemented a conflict early warning system (Hemmer & Smits, 2011; Beswick, 2012; Brante, 2011). Sweden has also implemented a

conflict early warning system (Lundin, 2010). Pakistan has also implemented a conflict early warning system that was proven effective in preventing conflict (Rahim, 2009).

Several agencies pioneered the implementation of a conflict early warning system that produced an index. One agency, The Fund for Peace (FFP) researches in more than 60 countries related to early warning conflicts. The research focus of the FFP is the potential or level of fracture, violence, or disintegration in a particular area and produces a Fragile State Index. This index takes the form of an annual report of a country that is prone to disunity (Messner & Haken, 2014). Another institution that focuses on determining a conflict index is PLoS MEDICINE. The index produced by PLoS MEDICINE is The Dirty War Index (DWI). The DWI focuses its studies on public health in war/conflict situations (Hsiao & Spagat, 2008). Another institution that has frequently developed early warning index is the Democracy Institute, which produces The Failed States Index that examines internal conflicts of a country. The indicators used to determine the index are social, economic, political, and military situations that drive the occurrence of conflict (Bessell, 2007). The Center for Systemic Peace examines conflicts, governments, and countries prone to discord by producing annual global reports. The global report takes the form of a State Fragility Index which consists of several indicators including effectiveness, legitimacy, military, political, regime type, economic, and social conflict (Marshall & Cole, 2014).

Past research shows that there has yet any intensive study on the conflict early warning system index. The development of index in Indonesia has mainly focused on the social vulnerability index, human development index, poverty profile index, and anti-corruption behavior index (Nugroho & Rahmawati, 2018; Susila et al., 2006). This study aimed to examine the conflict early warning system index as a conflict prevention effort in Indonesia. Research on conflict early warning index needs to be conducted as it beneficial for conflict prevention measures, as it indicates a level of conflict at low, medium or high. Low conflict index means that the situation is peaceful. Moderate conflict index requires prevention measures so that conflict does not escalate higher. High conflict index requires immediate handling to manage the conflict so that it does not develop into a violent manifestation of conflict (Suyono, 2018).

Method

Design

The study is quantitative and used a structural model, sequential model, and conjectural model approach (Van de Goor, & Verstegen, 1999; Brecke, 2000; Austin, 2011). The method involves the identification of conflict predictors, with an operational definition determined by the type of conflict, data collection, data analysis, modelling and calculation of conflict early warning index (Van de Goor, & Verstegen, 1999; Dewhurst & Oliveira, 2010; Walton, 2011).

The first step of this study was the identification of predictors of the Kulon Progo coastal land conflict. Social identity is identified as a conflict predictor and involves categorization, group identification, and group bias. Prejudice is another conflict predictor, involving social resources, motivational resources, and cognitive resources. The next conflict predictor is intention, consisting of attitudes, subjective norms, and perceived behavioral control. Conflict predictors such as social identity, prejudice, and intention are considered exogenous variables while Kulon Progo coastal land conflict was considered the endogenous variable.

Determination of the conflict early warning system index requires an understanding of the conflict type. The Kulon Progo coastal land conflict is considered to occur at the community level, shown by the resistance of the PPLP-KP regarding conversion of their agricultural land into a mining area (Widodo, 2013).

Respondents

Respondents of this study were farmers who fulfilled the requirements, namely understanding of issues regarding the Kulon Progo coastal land conflict and active participation in the rejection of iron sand mining. This study used proportional random sampling based on the formula of Isaac & Michael (Sugiyono, 2013) and obtained 279 subjects.

Table I
Number of Population and Research Sample

| No | Unit | Count | |
|----|-------------|------------|--------|
| | | Population | Sample |
| 1 | Trisik | 203 | 55 |
| 2. | Karang Sewu | 210 | 57 |
| 3. | Bugel | 201 | 55 |
| 4. | Pleret | 202 | 55 |
| 5. | Garongan | 209 | 57 |
| | Total | 1025 | 279 |

Data Collection

Data collection was done using the Kulon Progo coastal area conflict scale. Predictors of social identity employed the categorisation scale, a group identification scale, and a group bias scale. Predictors of prejudice used a social resource scale, a motivational resource scale, and a cognitive resource scale. The intention predictor used an attitude scale, a subjective norm scale, and a perceived behavioural control scale.

Before the scale was used for data collection, a trial was carried out to obtain the construct validity of the measuring instruments. In calculating the construct validity, confirmatory factor analysis was used. The advantage of confirmatory factor analysis as an instrument tester is that it enables attainment of indicators that reflect the theory (Greyling, 2006; Ghazali, 2008; Notobroto, 2013; Pontin, 2013; Coutlee, 2014; Arons, 2014).

Table 2

Result of each scale's validity construct obtained using confirmatory analysis

| No | Scale | The Goodness of Fit Statistics | | | | |
|-----|-----------------------------------|--------------------------------|-----|---------|-------|--------------|
| | | Chi-Square | df | P-value | RMSEA | t-value |
| 1. | Landconflict scale | 776.34 | 733 | 0.129 | 0.017 | 3.20 – 11.71 |
| 2. | Categorization scale | 420.51 | 402 | 0.252 | 0.015 | 4.00 – 11.97 |
| 3. | Group identification scale | 788.45 | 730 | 0.066 | 0.020 | 8.59 – 10.28 |
| 4. | Group bias scale | 867.79 | 809 | 0.074 | 0.019 | 6.81 – 11.97 |
| 5. | Social resource scale | 435.76 | 396 | 0.082 | 0.022 | 5.02 – 12.49 |
| 6. | Motivational resource scale | 152.22 | 131 | 0.099 | 0.029 | 7.58 – 10.75 |
| 7. | Cognitive resource scale | 61.57 | 53 | 0.196 | 0.029 | 8.40 – 9.49 |
| 8. | Attitude scale | 1.72 | 145 | 0.058 | 0.031 | 7.07 – 8.96 |
| 9. | Subjective norm scale | 3.21 | 4 | 0.523 | 0.000 | 9.95 – 10.31 |
| 10. | Perceived behavioral controlscale | 150.60 | 130 | 0.104 | 0.028 | 8.42 – 10.58 |

An example item of the land conflict scale is "We have received various terrors as a result of maintaining the coastal land as agricultural land". An example item of the categorisation scale is "(We are) willing to be involved in a movement against private parties who manage the coastal land and intend to convert our land into an iron sand mine". An example item of the group identification scale item is "When a community of coastal land farmers experience a problem, it can be solved properly". An example item of the group bias scale is "Even though many problems occur, there is no intention to move to other organisations." An example statement of the social resource scale is "The association provides assistance when a member gets into trouble". An example statement of the motivational resource scale is "Coastal land is a source of livelihood, so we must take good care of it". An example statement of the cognitive resource scale is "Deliberately not selling land is a form of resistance to thwart iron sand mines". An example of an item on the attitude scale item is "Becoming a farmer who lives more independently." An example of an item on the subjective norm scale is "Family support motivates us to be brave in resisting authorities and rejecting the iron sand mine". An example of an item stated on the perceived behavioural control scale is "Welfare is better gained from farming than selling land".

Data Analysis

Following data collection using the predetermined scales, the next step is to develop a model using the second-order confirmatory factor analysis (Ghozali, 2008). This model is a basis for the calculation of the index through begins with the process of determining dimension scores, followed by construct scores, and calculation of index (Suyono, 2015).

Results

Results of the data analysis show that the conflict early warning system model meets the Goodness of Fit criteria. Analysis using the Structural Equation Modeling (Ghozali, 2008; Notobroto, 2013) indicates achi-square value = 492.61, $df = 449$, p -value = 0.07597, and $RMSEA = 0.045$. Details of the Structural Equation Modeling analysis using second-order confirmatory factor analysis can be seen in Table 3.

From the results of the Structural Equation Modeling, it can also be inferred that social identity, prejudice, and intention are proven predictors of conflict. As the desired α is 0.05, the critical t -value = 1.96. Thus, if the t -value > 1.96, has a significant parameter value (Notobroto, 2013). The t -value of social identity with social conflict is $3.43 > 1.96$, meaning that social identity is a proven predictor of conflict. The t -value of the relationship between prejudice and conflict is $5.60 > 1.96$, meaning that prejudice is a proven predictor of conflict. The t -value of intention and its relation to conflict is $4.25 > 1.96$, meaning that the intention is proven to be a predictor of conflict.

Additionally, a detailed analysis shows that categorisation, group identification, and group bias are proven to contribute to the growth of social identity. Categorization is proven to be a predictor of social identity suggested by t -value of $8.045 > 1.96$. Group identification is proven to be a predictor of social identity indicated by t -value of $8.66 > 1.96$. Group bias is also proven to be a predictor of social identity indicated by a t -value of $8.67 > 1.96$.

Statistical analysis of the behavior process, dichotomy, and similarity indicators are proven to form the categorization indicator. This is shown from test results of the behavior process with categorization

which found a t -value of $9.41 > 1.96$, dichotomy with categorization which found a t -value of $9.37 > 1.96$, and similarity with categorization which found a reference/black line indicating significance.

Table 3

Results of the Structural Equation Modeling using second-order confirmatory factor analysis

| No | Analysis of Predictors | t-value |
|-----|--|-----------|
| 1. | Social identity to conflict | 3.43 |
| 2. | Prejudice to conflict | 5.60 |
| 3. | Intention to social conflict | 4.25 |
| 4. | Categorisation to social identity | 8.05 |
| 5. | Group identification to social identity | 8.66 |
| 6. | Group bias to social identity | 8.67 |
| 7. | Indicator of the behaviour process to categorisation | 9.41 |
| 8. | Dichotomy to categorisation | 9.37 |
| 9. | Similarity to categorisation | reference |
| 10. | Interest indicator and group identification | 9.41 |
| 11. | Evaluation to group identification | 11.09 |
| 12. | Attachment to group identification | 11.16 |
| 13. | Involvement to group identification | reference |
| 14. | Acceptance of criticism to group bias | 8.61 |
| 15. | Like and prioritise group to group bias | 9.52 |
| 16. | Threat to group bias | 10.73 |
| 17. | In-group favouritism to group bias | 8.60 |
| 18. | Fun, creative, and kind members to group bias | 9.34 |
| 19. | Closed off to group bias | 9.39 |
| 20. | Stereotype to group bias | reference |
| 21. | Social resource to prejudice | 14.07 |
| 22. | Motivational resource to prejudice | 10.59 |
| 23. | Cognitive resource to prejudice | 14.92 |
| 24. | Institutional support to social resource | 14.07 |
| 25. | Socialisation to social resource | 60.80 |
| 26. | Members' beliefs and standards to social resource | 66.08 |
| 27. | Conformity to social resource | 7.39 |
| 28. | Status to social resource | Reference |
| 29. | A sense of ownership to motivational resource | 12.11 |
| 30. | Self-esteem to motivational resource | 11.76 |
| 31. | Frustration to motivational resource | Reference |
| 32. | Internal attribution to cognitive resource | 36.20 |
| 33. | External attribution to cognitive resource | Reference |
| 34. | Attitude to intention | 13.64 |
| 35. | Subjective norms to intention | 2.24 |
| 36. | Perceived behavioral control to conflict | 16.12 |
| 37. | Keeping distance to conflict | 6.34 |
| 38. | Leading towards open conflict to conflict | 6.40 |
| 39. | Social capital to conflict | 6.22 |
| 40. | Suspicious and distrustful to conflict | 6.31 |

Statistical analysis shows that several indicators, including interest, evaluation, engagement, and involvement, form group identification. This is suggested from the test results of interest with group identification which found a t -value of $9.41 > 1.96$, evaluation with group identification which found a t -value of $11.09 > 1.96$, attachment to group identification which found a t -value of $11.16 > 1.96$, and involvement with group identification which found a reference/black line indicating significance.

Statistical analysis shows that several indicators including acceptance of criticism from the group, like and prioritise group, threat, group favouritism, pleasant, creative, and kind members, closed off, and stereotypes form group bias. This is suggested from the test results of acceptance of criticism from group with group bias which found a t -value of $8.61 > 1.96$, likes and prioritises group with group bias which found a t -value of $9.52 > 1.96$, threats with group bias which found a t -value of $10.73 > 1.96$, in-group favouritism with group bias which found a t -value of $8.60 > 1.96$, fun, creative, and kind members with group bias which found a t -value of $9.34 > 1.96$, closed off with group bias which found a t -value of $9.39 > 1.96$, and stereotype with group bias which found a reference/black line suggesting significance.

In detail, the results show that several indicators of social resources and motivational resources shape the development of prejudice. This is suggested from the test results of social resources with prejudice which found a t -value of $14.07 > 1.96$, motivational resource with prejudice which found a t -value of $10.59 > 1.96$, and the relationship of cognitive resources with prejudice which found a t -value of $14.92 > 1.96$.

Statistical analysis found that indicators of institutional support, socialisation, members' beliefs and standards, conformity, and status are proven to form social resources. This is indicated by test results of institutional support with social resource which found a t -value of $61.29 > 1.96$, socialisation with social sources which found a t -value of $60.80 > 1.96$, beliefs and standards of members with social resources which found a t -value of $66.08 > 1.96$, conformity with social resources which found a t -value of $7.39 > 1.96$, and status as a reference / black line indicating significance.

Results of statistical analysis show that indicators of ownership, self-esteem, and frustration are proven to form the motivational resource indicator. This is indicated by test results of the sense of ownership indicator with motivational resource which found a t -value of $12.11 > 1.96$, self-esteem with motivational resource which found a t -value of $11.76 > 1.96$, and frustration as a reference/black line indicating significance.

Results of statistical analysis show that the indicators of internal attribution and external attribution are proven to form the cognitive resource indicator. This is evidenced by the value of external attribution with cognitive sources of $t = 36.20 > 1.96$ and internal attribution as a reference / black line indicating significance.

Results of statistical analysis found that attitude, subjective norms, and PBC are proven to be predictors of intention. This is indicated test results of attitude with intention which found a t -value of $13.64 > 1.96$, subjective norms with intention which found a t -value of $2.24 > 1.96$, and PBC with intention which found a t -value of $16.12 > 1.96$

Results of statistical analysis found that indicators of threat and humiliation, keeping distance, leading towards open conflict, social capital, and suspicion/distrust are proven to be sources of conflict. This is evidenced by test results of the relationship between the threat and denigration indicator with the conflict indicator being significant, shown by a reference/black line, keeping distance from conflict which found that $t = 6.34 > 1.96$, leading to open conflict with conflict which found that $t = 6.40 > 1.96$, social capital with conflict which found that $t = 6.22 > 1.96$, and suspicion and distrust with conflict which found that $t = 6.31 > 1.96$.

After modelling, the next step is to carry out the calculation of the conflict early warning system index score on each respondent. The index calculation of the conflict early warning system is based on a formula which can be seen in the table below:

Table 4
Calculation of conflict early warning system index

| No | Construct | Dimension | Formula |
|----|-----------------|-----------------------|---|
| 1. | Social Identity | Categorization | $[0.60 * (\text{similarity score} / 6) + 0.80 * (\text{dichotomy score} / 6) + 0.81 * (\text{change process score} / 6)] / 3$ |
| 2. | | Group identification | $[0.64 * (\text{involvement score} / 5) + 0.85 * (\text{attachment score} / 5) + 0.84 * (\text{evaluation score} / 5) + 0.68 * (\text{interest score} / 5)] / 4$ |
| 3. | | Group bias | $[0.55 * (\text{stereotype score} / 3) + 0.81 * (\text{closed off score} / 3) + 0.79 * (\text{Fun members score} / 3) + 0.68 * (\text{in-group favoritism score} / 3) + 0.79 * (\text{threat score} / 3) + 0.82 * (\text{prioritise group score} / 3) + 0.67 * (\text{criticism score} / 3)] / 7$ |
| 4. | | | $0. \text{Categorisation score} + 0.72 * \text{group identification score} + 0.89 * \text{group bias score}$ |
| 5. | Prejudice | Social resource | $[0.98 * (\text{status score} / 3) + 0.41 * (\text{conformity score} / 3) + 0.98 * (\text{belief score} / 3) + 0.97 * (\text{socialisation} / 3) + 0.97 * (\text{Intistitutional support} / 3)] / 5$ |
| 6. | | Motivational resource | $0.76 * (\text{frustration score} / 3) + 0.76 * (\text{pride score} / 3) + 0.79 * (\text{sense of ownership score} / 3)] / 3$ |
| 7. | | Cognitive resource | $[0.98 * (\text{internal attribution score} / 3) + 0.96 * (\text{external attribution score} / 3)] / 2$ |
| 8. | | | $0.79 * \text{social resource score} + 0.78 * \text{motivational resource score} + 0.83 * \text{cognitive resource score}$ |
| 9. | Intention | | $0.82 * (\text{attitude score} / 11) + 0.14 * (\text{subjective norms score} / 4) + 0.91 * (\text{PBC score} / 13)$ |

After calculation of the construct, dimension, and indicators with the above formula, the next step was to calculate the conflict early warning system index in one respondent using the following formula:

$$\text{Conflict early warning system index} = 0.27 * \text{social identity score} + 0.60 * \text{prejudice score} + 0.35 * \text{intention score}$$

The next step is to calculate the conflict early warning system index by based on the indicator score, dimension score, and construct score. An example of a calculation on one respondent obtained the following results:

Tabel 5
Example of a calculation on one respondent

| Construct | Dimension | Indicator | Score | |
|-------------------------------|-----------------------|--------------------------------|---------------------------|-------|
| Social Identity | Categorisation | Similarity | 4.000 | |
| | | Dichotomy | 3.667 | |
| | | Behavioral process | 3.833 | |
| | Group identification | Group involvement | Involvement | 4.200 |
| | | | Attachment | 4.200 |
| | | | Evaluation | 4.200 |
| | | Group bias | Interest | 4.400 |
| | | | Stereotype | 3.333 |
| | | | Closed off | 3.667 |
| | Prejudice | Social resource | Fun member | 3.333 |
| | | | In-group favoritism | 3.667 |
| | | | Threat | 4.000 |
| | | | Like and prioritize group | 3.000 |
| | | | Accept criticism | 3.667 |
| | | | Total Score | 6.643 |
| | | | Status | 4.000 |
| | | | Conformity | 3.333 |
| Members' beliefs and standard | | | 4.000 | |
| Socialization | | | 4.667 | |
| Intention | Motivational Resource | Institutional support | 4.333 | |
| | | Frustration | 3.333 | |
| | Cognitive resource | Pride | 3.000 | |
| | | A sense of ownership | 3.333 | |
| Intention | Cognitive resource | Internal attribution | 3.333 | |
| | | External attribution | 3.000 | |
| | | Total Score | 7.321 | |
| | | Attitude | 4.000 | |
| | | Subjective norms | 4.250 | |
| Intention | Cognitive resource | PBC | 4.154 | |
| | | Total Score | 7.655 | |
| | | Conflict early detection index | 11.855 | |

To test the accuracy of the conflict early warning system, a test was carried out to see the strength of the correlation with the conflict score measured directly through the data collection instrument based on the following formula:

$$\text{Conflict} = [0.41 * (\text{threat score} / 6) + 0.76 * (\text{keep distance score} \\ \text{distance} / 7) + 0.78 * (\text{leading to open conflict} \\ \text{score}) / 10 + 0.72 * \text{social capital score} \\ / 8 + 0.75 * \text{suspicious} / 7] / 5$$

Analysis of the spearman correlation showed that the strength of the relationship (r_s) between the conflict early detection index and the conflict score is 0.823 ($p = 0.000$). Based on the high correlation results Spearman correlation, it can be inferred that the conflict early warning system has good accuracy.

After ascertaining that the conflict early warning system has good accuracy, the next step was to determine which category (i.e. low, medium, high) the conflict early warning system index belongs to. The conflict early warning system index score is divided into three categories based on normative criteria, which is the minimum and maximum score that may be obtained, ranging from 2.81 - 14.7.

Based on the above, the criteria implemented is the following:

Table 6
Criteria of the conflict early warning system index

| Index score | Category |
|-------------|----------|
| <6.57 | Low |
| 6.57-10.32 | Medium |
| >10.32 | High |

Based on the above categorisation, the conflict early warning system index at 11.855 is considered high as it is larger than 10.32. Calculation of the conflict early warning system index is carried out on all 279 respondents. After the calculation process is carried out on all respondents, the distribution of the conflict early warning system index scores based on the criteria is as follows:

Table 7
Score distribution of conflict early warning system index

| Conflict category | Frequency | Percentage |
|-------------------|-----------|------------|
| Low | 0 | 0 |
| Medium | 38 | 13.6 |
| High | 241 | 86.4 |
| Total | 279 | 100 |

Based on the distribution of the conflict early warning system index scores, it can be inferred that the early conflict detection index is high. This is based on the data that 241 or 86.4% of respondents belonging to the high index category.

Discussion

The calculation of the conflict early warning system index produces a value of 241 or 86.4% of respondents which is categorised as high. Based on the score distribution, it can be inferred that the conflict early warning system index is considered high. The Kulon Progo coastal land conflict which is considered to have a high index, has not yet manifested into an apparent conflict; thus, it is still considered as a latent conflict.

This phenomenon can be considered a latent conflict as the conflict has not yet grown into a manifested conflict. In a cycle of conflict, latent conflict is considered the second stage. The cycle of conflict begins with what is called stable peace, which is a condition where the society is in a peaceful condition. In the second stage, peace turns unstable and is characterised by increasing tensions and a negative decline of peace, for instance, refusal to interact and cooperate. If the second stage cannot be managed properly and efforts to stop conflict fail, then the third stage occurs. The third stage is the manifestation of conflict (Swanstrom & Weissmann, 2005).

The results which show that the conflict early warning system index is at a high level is an early warning that there has been a conflict in the Kulon Progo coastal area. High index is caused by problems of

interest and clashes of values (Bjorn, 2003). These interest in question is related to the land being relied on as a source of livelihood but is provisioned to be a land mine. The clash of value is brought by the farmers who perceive that the land is an ancestral inheritance that must be maintained, even though they have to risk being involved in the conflict (Suyono. 2013).

The existence of the Kulon Progo coastal land conflict can be explained as tragedy of commons, which is a conflict caused by one party expecting to have more than their rights. This occurs as a result of one party wanting more due to shared awareness which in turn drives the desire to have more than the available allocation. The intention of individuals tends to damage other rights of other parties (Myers, 2013).

According to experts, the occurrence of conflicts can be explained using the social dilemma theory because. When there is something that threatens the self or the group, a conflict occurs as there is a belief that one party does not want to be scathed. Conflicts also occur because of a desire to defend oneself, protect interests, and achieve goals. In order to defend oneself, protect interests, and achieve goals, there are several things that are carried out by an individual or group. First, each party (individual or group) assesses themselves according to the situation. This assessment is related to how the individual or group can save his or their family and honour while also creating strategies not to be deceived by other parties. On the other hand, the other party considers that their behaviour is inappropriate, that they cannot be trusted, does not want to follow the rules, and is self-interested. Second, changing desires. Third, the assessment of behaviour that is not detrimental. Fourth, it is difficult to predict whether or not other parties are willing to cooperate. Lastly, related to values that serve as guidelines (Aronson, Wilson, and Akert, 2005; Sarwono, 2005; Suyono, 2013). Van Lange (2013) defines social dilemma as an act of collaboration and lack of cooperation. A social dilemma occurs because individuals from other parties' unwillingness to cooperate leading to a punishment which causes them to feel unwelcome, that is, punishment to an individual from a different group of people to who gave the previous punishment.

Another theoretical concept that can explain the high index of the Kulon Progo coastal land conflict is the realistic group conflict theory. According to the theory, the Kulon Progo coastal land conflict is caused by contending over material resources that are related to the area/land (Liu, 2012).

Conflict also occurred due to an attempt to preserve limited resources, in this case, the coastal land, which is also a source of income for farmers on the southern coast of Kulon Progo (Suyono, 2013). This process makes the conflict realistic because the contested source is limited subsequently giving rise to competition (Zarate, 2004).

Another consequence of limited competition is that it poses a threat to the position of other parties (Levin, 2013). In this case, farmers are threatened with the loss of land, which for years has been planted with various vegetable and fruit commodities as their sole source of income. Another theoretical concept that can explain the conflict index being high is that the latent conflict process describes the situation, where the conflict is still hidden, felt, and has not materialised directly, which is caused by a clash of interests, conflict over needs, differences in opinion, and opposing goals (Stangor, 2004). Kulon Progo coastal land conflict is latent because it has been going on since 2007. The Kulon Progo coastal land conflict is due to it being the only place farmers' lives depend on, leading them to feel like their farming land will be evicted by companies engaged in mining. The land will be exploited as an iron sand mine (Suyono, 2013).

Additionally, the conflict occurred because for the farmers, the coastal land which has become a living space - a place to actualise themselves, to sustain their livelihoods, uphold their pride, develop their creativity - will be converted by investors to open an iron sand mine (Widodo, 2013). This has caused farmers to reject the iron sand mining plan. This rejection was stated since the beginning of the sand mining project plan socialised by mining operators.

An important matter to observe from the Kulon Progo coastal land conflict is that unlike other regions, the conflict has manifested into other conflicts. For example, in Mesuji and Bima, which claimed significant property losses. Yet even though the Kulon Progo coastal land conflict had lasted for

so long and at a high index level, it has not developed into violence. The reality is, the Kulon Progo coastal land conflict is merely a latent conflict (Suyono, 2015).

Although the conflict has been going on for a long time, it is still a latent conflict which can be explained based on the background of the conflict actors (i.e. the farmers) who are Javanese. As private people, the Javanese tend to keep their distance, avoid open conflict, and avoid hostile parties in facing conflict (Mulder, 1985). Thus conceptually, the Kulon Progo coastal land farmers who are Javanese did not confront directly during the conflict but preferred to use the philosophy “cultivating is contending”. This principle means that as long as the farmers are still planting a variety of vegetable commodities on the coastal land, investors will not succeed in displacing coastal land. Another one the farmers’ principle is that farming has increased their welfare, so they will not be persuaded to sell land to investors (Suyono, 2015).

The land conflict has continued for more than eight years, and farmers have remained or withstood the conflict situation by continuing to cultivate the coastal land despite the continuous threat of eviction. Several things that have led them to withstand in conflict situations strongly are grounded in ancestral values, such as the land being inherited from ancestors and must be preserved or defended and would not be taken away by other parties. This value is expressed in the Javanese proverb "*sadumuk bathuk sanyari bumi*" which means that even though the land area is narrow, the earth is ours, and it must be maintained (Suyono, 2015).

The ability to deal with conflict is also consistent with a Javanese concept of life which states that being conflicted, looking seemingly suffering, giving up and apologising will seem like one has lost face to the other party. This will foster dislike, difficulties reconciling, and having the principle of “succumbing is considered defeat” (Mulder, 1985). Such values lead farmers to withstand and not want to give up on the situation. Farmers attempt to continue maintaining their land so as not to be evicted by investors. Farmers try to look manly or strong and do not want to give up as they do not want to lose face to other parties. This process leads farmers to dislike and not want to make peace with investors and

stakeholders who planned the Kulon Progo ironsand mine; thus the farmers do not want to budge as they hold the principle that giving up equals defeat (Suyono, 2015).

Deeper arguments regarding the occurrence of the Kulon Progo coastal land conflict can be grounded in the understanding that, despite the high level of conflict, it has not yet manifested itself due to the farmers' Javanese background which upholds the ideals of maintaining a peaceful culture. This peaceful culture is manifested through the principles of harmonious life, that is, an effort to maintain social harmony, strengthen the family, prioritise mutual cooperation, and seek *tepa selira* (Endraswara, 2012).

In order to create a world of peace, the Javanese volunteers to obey authorities as shown by the principles of *Setya Tuhu* (devotion), non-rejection, and non-resistance. Instead, the Javanese practices the principle of harmony. The ethical implication of the harmony principle is to demand that individuals put in the effort to achieve their personal rights without interfering with the social harmony and prohibit the taking of actions that can lead to conflict (Endraswara, 2012).

Such principles lead Kulon Progo coastal land farmers to refrain from physical resistance but using more peaceful strategies such as planting on the coastal land despite the condition and building networks with institutions from abroad (Suyono, 2013). This explanation infers that cultural values serve as a guide for farmers with Javanese cultural backgrounds in living their lives, however, though if further observed, not all values are strictly adhered to (Endraswara, 2012). This is proven by the farmers contending against authorities' policies that do not match their aspirations. Farmers aspire to maintain the coastal land as an agricultural area which brings them the courage to oppose people in power, as they feel that their aspirations are not heeded inferred by governmental policies that want to change agricultural land into mining areas (Suyono, 2013).

Why aren't all Kulon Progo coastal land farmers guided by Javanese culture? There is a phenomenon of ethical hybridisation and the rise of Javanese dissidents (Endraswara, 2012). The Kulon Progo coastal land farmers who are in conflict with miners and authorities, and reject the policy regarding the exploitation of ironsand are considered a hybrid of Javanese dissidents.

Deeper explanation

On the one hand, land farmers who are Javanese dissidents cannot separate themselves from their ancestral heritage. Symbolically, Javanese dissidents have existed from generation to generation. This is reflected in the stories in *wayang* puppetry or *ketoprak*: that there is a defiance of Javanese ethics, for example, the defiance of King Kresna who defended Bomanarakasura rather than siding with the defiance of Pandavas, Minakjinggo, Aryapenangsang, and Ki Ageng Manger's (Endraswara, 2012).

The hybridisation of Javanese dissidents is not always negative; it can be positive as long as the defiance is carried out not merely to fulfil momentary carnal desires, but to criticise the authority in power whose policies benefit certain individuals and groups but are detrimental to the benefit of the public (Endraswara, 2012). Based on this explanation, the defiance carried out by Kulon Progo Beach land farmers in the form of rejection of iron coastal land sand mines that has caused prolonged conflict and brought other negative impact is not only done to fulfil momentary impulse for practical political interests, but is positive as it is done to preserve the environment, maintain the farmers' existence, manage cultivation of crops that subsequently bring food stability, and maintain a source of sustenance or livelihood (Suyono, 2015).

Furthermore, the high level and long-lasting latent conflict are brought by conflict in interests (Stangor, 2004). This is supported by qualitative evidence which found that the conflicts occurred because the farmers' interests is to maintain the coastal land for agricultural purposes as it is their source of income, while the local government and miners have the interest of increasing regional income and business by converting coastal land into mining areas (Suyono, 2013).

In addition to the conflict of interest, the conflicts occurred due to contestation over needs. The coastal land has tightly interlaced the life of farmers who are concerned with the preservation of surrounding ecosystems and the environment. Preservation is needed because the coastal land supports farmers' livelihood. Subsequently, farmers must maintain the land for the next generations so that their children and grandchildren do not lose their jobs (Suyono, 2013).

Unlike the needs of farmers, the miners' motives are limited to exploiting land by selling iron sand. After obtaining profits from the land, what is left is damage to the ecosystem. The ecosystem is related to the lives of farmers, their ancestors, and the environment (Suyono, 2013).

Conflicts related to the contestation of needs are corroborated by the need for work. The presence of ironsand mining will eliminate the work of farmers; thus, farmers assume that losing land means losing their jobs. Loss of a job has an impact on food consumption affairs as they are not to meet basic needs. Loss of land and inability to fulfil basic needs are triggers to the resistance of ironsand mining. The resistance subsequently causes latent conflict (Suyono, 2013).

There are two different views regarding the prolonged latent conflict (Stangor, 2004) between farmers and other parties. This is evidenced by qualitative findings, as seen in the planning of the ironsand mining project. Farmers perceive that coastal land is more suitable as an agricultural area, but the government and miners perceive that the coastal land is better utilised as a mining area (Suyono, 2013).

Furthermore, latent conflicts are also regarding opposing goals (Stangor, 2004) with the farmers trying their utmost to maintain the land as agricultural land, while the government and miners are seeking various ways to continue to make the coastal land a mining area. Differences in these goals subsequently caused conflicts (Suyono, 2013).

As an impact of conflicting interests, contestation of needs, differences in opinions, and opposing goals that occurred during a prolonged period of time, the level of conflict escalated to a high index, characterised by hostility, resistance, and the potential to manifest in conflicts (Stangor, 2004). The enmity is also drawn towards the culturally ruling royal family in Yogyakarta who is part of a corporation that attempts to mine the ironsand on the coastal land. This has lead farmers to feel that cultural authorities are disturbing their tranquil lives. Hostilities in the Kulon Progo coastal land are also brought by investors who want to take over the farmers' land (Suyono, 2013).

Findings show that the conflict early warning system index is categorised as high. Thus immediate precautions should be taken so that it does not lead to manifest in conflict. It is recommended that the stakeholders, in this case, the bureaucracy, decide on a policy that regulates the land as agricultural land that should not be used for mining. The benefits of maintaining the agricultural land are: being able to support farmers, preserve the environment, restore social capital, and keep social and cultural systems running peacefully (Suyono, 2015).

Conclusion

The research findings show that the conflict early warning system index is categorised as high and is still latent. The conflict in the second stage of the conflict cycle, that is, which is at the stage of peace instability, characterised by increased tension. If not managed properly and there is a failure to stop the conflict, then the status will increase to the third stage, that is, the manifestation of conflicts. Based on this reality, it is recommended that preventive measures are taken to avoid the manifestation of conflict. Preventive measures can be done by authorities – creating a policy to maintain the land as an agricultural area. The benefits of maintaining the agricultural land are: being able to support farmers, preserve the environment, restore social capital, maintaining social systems, and peaceful culture.

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